Vol. I MAY, 1917 No. 3

MAY 27 1918
UNIV. OF MICH.
LIBRARY

THE AMERICAN REVIEW OF TUBERCULOSIS

JOURNAL OF

THE NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS

EDITORIAL STAFF

EDWARD R. BALDWIN, Saranac Lake, N. Y.
Editor-in-Chief

LAWRASON BROWN, Saranac Lake, N. Y.
H. R. M. LANDIS, Philadelphia, Pa.
PAUL A. LEWIS, Philadelphia, Pa.
M. J. ROSENAU, Boston, Mass.
HENRY SEWALL, Denver, Col.
BORDEN S. VEEDER, St. Louis, Mo.

ALLEN K. KRAUSE, Baltimore, Md.
Managing Editor

PUBLISHED MONTHLY

AT 2419-21 GREENMOUNT AVE., BALTIMORE, MD.

BY THE NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS

Entered as second class matter March 9, 1917, at the post office at Baltimore, Maryland, under the Act of August 24, 1912

Copyright 1917 by the National Association for the Study and Prevention of Tuberculosis

Sleeping and Sitting in the Open Air

The National Association for the Study and Prevention of Tuberculosis has re-written and completely revised its pamphlet "Directions for Living and Sleeping in the Open Air" and is putting out a new edition entitled, "Sleeping and Sitting in the Open Air." The pamphlet is especially designed for consumptives and others who are compelled to sit and sleep in the open air. Physicians will find it extremely useful as a help to their patients.

What it Contains

How everyone can get fresh air.
Things needed for sleeping and sitting in the open air.
Sleeping out in the big city.
Sleeping out in the small city or country town.
Suggestions for clothing and bedding.
Manufacturers of sitting and sleeping-out devices.
Numerous illustrations showing all the latest devices for sitting and sleeping in the open air, with plenty of descriptive material about each.

It is Attractive

The pamphlet contains 24 pages, attractively printed and profusely illustrated with an especially pleasing cover, printed in two colors. Its attractiveness will add much to its usefulness. It is the type of pamphlet that people will take home and keep.

The Price

The price of the pamphlet has been fixed as near the actual cost as possible, viz., 2½c each in lots of less than 100; $2.25 in lots of 100 to 1000, and $20.00 in lots of one thousand or more. Transportation charges are not included in these prices.

ORDER FROM

The National Association for the Study and Prevention of Tuberculosis

105 East 22nd Street, N. Y. C.

tion rate of the gas, even after pneumoperitoneum has persisted for a long time, is removed.

SUMMARY

The intraperitoneal injection of air into normal rats produces no visible alterations in the peritoneum or abdominal organs even if the inflation is repeated at three or four day intervals for a period of sixteen weeks.

Dead tubercle bacilli injected intraperitoneally into normal rats (into the left lower quadrant of the abdomen) are usually found well walled off by the omentum in the vicinity of the spleen and stomach.

If dead tubercle bacilli are injected intraperitoneally into rats coincident with the inflation with air, and the inflation is repeated at three or four day intervals for a period up to sixteen weeks, there is a marked dissemination of the tubercle bacilli in the peritoneal cavity, which is especially pronounced on the under surface of the liver, the abdominal surface of the diaphragm, and occasionally the intestines in general. The air itself had no appreciable effect upon the peritoneum in such animals.

Rats having received an intraperitoneal injection of dead tubercle bacilli revealed no difference in the rate of absorption of air injected intraperitoneally only once, four months after the injection of the bacilli, as compared to the absorption initially or at any time during the four months inflation by repeated intraperitoneal injection of air.

That there is a diminished rate of absorption of air in artificial pneumothorax as the time of persistence of the pneumothorax increases, as has previously been repeatedly observed, was confirmed; but no such change was obtained in the absorption of a crystalloid (methylene blue) from the pleura in cases of pulmonary tuberculosis with prolonged artificial pneumothorax.

REFERENCES

(1) KOENIG: Verhandl. des Internat. Med. Congress, 1890, iii, 31–41.
(2) LINDNER, H.: Deutsch. Zeitsch. f. Chir., 1892, xxxiv, 448–92.
(3) Roersch: Revue de Chir., 1893, xiii, 529–67.
(4) FRANK, ADOLPH: Mittl. a. d. Grenzgeb. der. Med., 1900, vi, 97–198.
(5) BORCHGREVINK, O.: Ibid., 1900, vi, 434–450.
(6) ROSE, ULRICH: Ibid., 1901, viii, 11–56.
(7) MARTENS: Charité-Ann., Berl., 1900, xxv, 250–6.
(8) HABERER, H. AND CLAIRMONT: Wien. klin., Wochsch., 1902, xv, 1185–8.
(9) SHIPLEY AND CUNNINGHAM: Amer. Jour. Physiol., 1916, xl, 75–81.
(10) GATTI, G.: Arch. klin. Chir., 1896, liii, 645–709.
(11) MOORHOF, Mosetig von: Wien. Med. Presse, 1893, xxxi, 1–4.
(12) NOLEN, W.: Arch. f. klin. Med., 1893, lxxxv, 145.

(13) FOLET, H.: Revue de Chir., 1894, xii, 1068–73.
(14) BRÜCKNER, G.: Berl. klin. Wochschr., 1914, li, 103.
(15) ROUET, A.: Rev. gen. de clin. et de therap., 1906, xx, 453.
(16) FLORIS, A.: Gazz. de osp., Milano, 1910, xxxi, 2–3.
(17) MCGLINN, J. A.: N. Y. Med. Jour., 1908, lxxxviii, 359.
(18) BAILEY, F. R. AND MILLER, A. M.: Text Book of Embryology, 1911, 372–84.
(19) KLEMPERER, F.: Berl. klin. Wochschr., 1911, xlviii, 22–85.
(20) REST, E.: Quar. Jour. of Med., 1912–13, vi, 259–92.
(21) WARNECKE: Beitr. z. Klin. der Tuberk., 1910, xvi, 171.
(22) KAUFMANN: H.: Ibid., 1912, xxiii, 57–61.
(23) KISTLER, E.: Beitr. z. Klin. Tuberk. 1911, xix, 459–67.

EDITORIAL

STANDARDS OF DIAGNOSIS OF PULMONARY TUBERCULOSIS IN CHILDREN

The following set of standards of diagnosis of pulmonary tuberculosis in children were originally prepared for the New York City Association of Tuberculosis Clinics. After a preliminary trial in these clinics, the standards were submitted to the board of directors of the National Association for the Study and Prevention of Tuberculosis on October 16, 1915, with the suggestion that they be adopted as a uniform method of diagnosis throughout the United States.

The board of directors of the National Association appointed the undersigned committee to consider the standards and to report back as to the advisability of their adoption. When the committee reported at the meeting of the board on March 11, 1916, it was decided to have the report printed and made available for discussion by the membership of the National Association. The full report, with the standards, was published in the *Bulletin of the National Association* for April, 1916. At the annual meeting of the National Association in May, 1916, a special session was devoted to the discussion of the standards, a report of which will be found on pages 37 to 51 of the *Transactions of the Twelfth Annual Meeting*.

Following the outlines of this discussion, the committee revised the standards and presented them at a meeting of the board of directors of the National Association on October 14, 1916. The board of directors at this time gave the committee instructions to make further revisions as might be necessary and to prepare the standards for publication with the authorization of the National Association.

The standards which are submitted herewith are the result of this long discussion. It is hoped by the committee that they will meet the needs of those who are called upon to diagnose tuberculosis in children, and it is urgently recommended that all tuberculosis clinics, sanatoria, open air schools, antituberculosis associations, boards of health and other agencies that deal in any way with the tuberculosis problem in children adopt these standards, and in future classify their needs in accordance therewith.

Standards for the Diagnosis of Pulmonary Tuberculosis in Children

In a certain number of cases the conditions establishing a diagnosis of pulmonary tuberculosis in children are identical with those which obtain in adults. In such cases, the Standards of Diagnosis and Classification are the same as those set forth by the National Association for the Study and Prevention of Tuberculosis.

In a very large number of cases, however, the conditions in children differ materially from those in adults and for these the following procedures and standards are recommended:

HISTORY

The following points should be covered in obtaining the history. Some of them, as indicated by italics, are more important than others. Emphasis should be laid upon the combination of several of these conditions, it being understood that all of them are not essential and that no one of them alone establishes a diagnosis.

Intimate exposure to infection, especially if prolonged.

Delayed convalescence from illness.

Malnutrition: indicated by underweight for height and age, loss of or failure to gain in weight, and pallor.

Cough.

Expectoration.

Haemorrhage.

Pleurisy.

Dyspnoea.

Night sweats.

Digestive disturbances.

Ear discharge.

CONSTITUTIONAL SYMPTOMS

In every physical examination, the possible occurrence of all of the following constitutional symptoms should be considered by the examiner. In consideration of their importance, the same rule should be followed as noted under "History."

Change in disposition, shown by lassitude and fretfulness.

Malnutrition.

Elevation of temperature, acceleration of the pulse, acceleration of the respiration.

Cough.

Expectoration.

Haemorrhage.

Pain.

Dyspnoea.
Night sweats.
Digestive disturbances.

PHYSICAL SIGNS

The following physical signs should be investigated by the usual method of physical examination:

Persistent and persistently localized râles, by which is meant:

(a) Râles about the nipples; that is, anywhere between the fourth and sixth ribs, the border of the sternum and the anterior axillary line.

(b) Râles anywhere along the border of the sternum, or in the region of the apices, as in adults. These, however, are infrequently found. These râles may be heard during inspiration or expiration, or after a cough. In many instances they can be elicited only by the cough.

(c) Râles limited to a considerable part or the whole of any one lobe. If these are associated with a positive tuberculin test and persist over a considerable period of time, they should be regarded as tuberculous, despite the fact that in association with enlarged tonsils or adenoids similar signs may occur. However, in the absence of any means of definitely interpreting these signs and particularly with a history presenting evidence of exposure to tuberculosis, it is wise to give children the benefit of the doubt and to keep them under observation until a definite diagnosis can be made.

Additional abnormal signs elicited by the usual method of examination; such as changes in resonance and breath sounds.

Any glandular, joint, bone, muscular, cutaneous, ocular or aural abnormalities, which are of value as corroborative evidence of the pulmonary findings.

ESSENTIALS FOR THE DIAGNOSIS OF PULMONARY TUBERCULOSIS

1. Distinct, persistent, and persistently localized adventitious signs (râles) in the chest.

2. Reaction to a tuberculin test. This reaction consists of an area of hyperaemia not less than 5 mm. in diameter occurring in forty-eight hours after the application of 100 per cent Koch's Old Tuberculin by the cutaneous method of von Pirquet.

EXCEPTIONS

1. Given an unquestioned and otherwise unexplained haemoptysis with a positive tuberculin reaction and with or without a definitely positive radiograph, a diagnosis of pulmonary tuberculosis is to be made.

2. Given a radiograph which shows unmistakable mottling well into the pulmonic fields without any sharp outline suggestive of calcification with a positive tuberculin reaction in children under three or four years of age, even

if constitutional symptoms are absent, and in older children who have frequent cough or rapid pulse or fever, a diagnosis of pulmonary tuberculosis is to be made.

NOTES

1. Cough will be present in most instances, but its absence does not negative a diagnosis of tuberculosis when the essentials above mentioned are present.

2. Fever, to some degree, will also be present in most instances during some period of the disease. Temperatures in young children should be taken by rectum and observations should be made twice a day, at frequent intervals and for at least a month, before the absence of fever is determined. All other causes of fever must be carefully excluded. Mouth temperature records in children under eight years of age are very unreliable.

3. No patient with fever and persistent physical signs should be considered free from tuberculosis until the tuberculin test has given a negative reaction three successive times within a month. In the interval patients are to be considered as suspects under observation. In rare instances, congental syphilis simulates tuberculosis and a Wassermann test should be made in all cases with a suspicious history.

4. Examiners are reminded that undue importance should not be ascribed to the slight vocal intensification and respiratory modifications, or to slight alterations in the percussion note, so frequently present in children, especially at the apices, unless they are persistent.

SUSPECTS

In a certain group of children, an immediate definite diagnosis is impossible and such children should be kept under continued observation. Physical signs may be absent or indefinite, but there must be one or more constitutional symptoms or items of the history indicated above as significant. Exposure to infection is here especially important.

The Committee:

James Alexander Miller *Chairman*, New York,
Bertram S. Waters, *Secretary*, New York,
John H. Lowman, Cleveland,
Henry I. Bowditch, Boston,
John Howland, Baltimore,
I. Abt, Chicago,
O. W. McMichael, Chicago,
G. L. Bellis, Milwaukee.

MEDICAL NOTES, ABSTRACTS AND REVIEWS

It will be the eventual purpose of the REVIEW thoroughly to canvass all literature on tuberculosis as it appears in other medical periodicals and to present it in abstract form. Authors are requested to send abstracts or reprints of their papers to the Abstract Editor, Dr. George Mannheimer, 41 West 51st Street, New York, N. Y. In the present number many of the abstracts have been taken from other medical publications, such as the Journal of the American Medical Association, the Medical Record, the New York Medical Journal, etc., to whom acknowledgment is due.

Method of Concentrating Tubercle Bacilli in Sputum and Urine.—For sputum: place 5 cc. sputum in a 15 cc. centrifuge tube, add 5 cc. of a 10 per cent sodium chlorid solution and shake in a shaking machine, or by hand if none available, until it is a thin homogenous fluid as free from clumps as possible. Add 0.5 cc. of gasoline and repeat shaking process until the gasoline is thoroughly emulsified. Centrifuge at a low rate of speed until the gasoline forms a supernatant liquid immediately beneath which is a scummy layer in which tubercle bacilli will be found, if present in original specimen. For urine: place 10 cc. urine in 15 cc. centrifuge tube and centrifuge three minutes at a rapid rate of speed. Pour off supernatant fluid. To the sediment add 10 cc. of original urine and 1 gm. of sodium chlorid. Shake thoroughly or until the sodium chlorid is dissolved, and add 0.5 cc. of gasoline. Shake again for about five minutes, then centrifuge slowly. The scum beneath the gasoline contains tubercle bacilli, if present.—*Method of Concentrating Tubercle Bacilli in Sputum and Urine, W. Kraus and J. S. Fleming (Memphis), Jour. of Labor. & Clin. Med., September 1, No. 2, 1916.*

Rest and Exercise in Tuberculosis.—In the treatment of pulmonary tuberculosis there are no more important measures than rest and exercise. In the beginning of the treatment rest is always indicated, but many doctors tend to push rest to an unwise extreme. Patients with normal temperature are kept flat on their backs laying up useless pounds of fat rather than turning that fat into muscle by judicious graduated exercise. Rest lessens circulation and hence toxic absorption. It lessens oxidation and lowers temperature and so decreases tissue waste. It puts the diseased lung at rest. It rests the heart. It lessens cough and expectoration. It encourages weight gaining, and, if properly managed, it helps to put the mind at rest. But there comes a time when continued rest ceases to be of value and becomes harmful. The time, when exercise should be taken up, is shown by absence of temperature, by diminution in cough and expectoration, by gain in weight and strength and by slowing of the pulse. Exercise is begun with periods of from one to five minutes and increased by from one to five minutes a day and guarded by a careful record of symptoms, fever, and pulse, kept by the patient and seen by the doctor twice a week. It should be discontinued if there is a reaction. The first step toward exercise is in sitting in a reclining chair for half an hour, the time to be lengthened each day, two-thirds of it spent recumbent, one-third erect; the chair having an absolutely flat back, to encourage erect shoulders. For the recumbent patient the Adirondack recliner is best; but when he has to sit up, the Bloch chair is much better. The next step is crocheting for women, solitaire for men and reading for both. Next comes walking, gradually increased, and, after the patient can walk from one-half to one hour without bad effects, driving is allowed. The ascent of steep hills is finally taken up and the patient should be able to walk over steep hills for three hours without undue dyspnea, with no loss of weight and no tachycardia. In this way we try to return the patient to a normal activity so that he will be able to stand the normal strain of life and be less apt to return to old indiscretions, but will take the happy mean between a timid anxiety and foolhardy overdoing which is so sure to land him into trouble.—*The Problem of Rest and Exercise in the Treatment of Pulmonary Tuberculosis; A Plea for Less Ergophobia, Charles L. Mino, (Asheville, N. C.) Med. Record, October 7, 1916.*

Rest of the Individual Lung by Posture.—Respiration in a normal person takes place upward of 30,000 times in

twenty-four hours. When a tuberculous patient rests on one side at night, the dependent lung is restrained in motion; but the upper lung opens and closes about 12,000 times in ten hours of sleep. There is a marked tendency for the consumptive to lie on the side of the better lung at night, and it often happens that the very lung which needs the most rest is getting the most work. For various reasons it would seem that the majority of normal persons sleep on their right sides. While Walsh pointed out that in pulmonary tuberculosis the disease would seem to begin in most patients at the right apex, the writers have noted that they have had more patients needing pneumothorax with extensive left-sided than with extensive, right-sided tuberculosis. From history one would suppose that the disease would be more widespread in the more exercised lung; but the fact that the majority of persons sleep on their right sides and that the majority of advanced tuberculous lesions are apt to be found in the left lung may not prove to be entirely coincidental. The experiences noted from successful artificial pneumothorax show the great value of rest of the individual lung. During the past year they have applied this principle of rest in a large number of cases, and in addition have placed a small firm pillow to restrain the motion of the diseased lung to a greater degree. Some patients so treated have been able to remain lying on the side of the diseased lung over twenty hours a day for months at a time with little effort. This must be accomplished gradually. The results were encouraging, and the writers feel that they have observed in certain cases a cessation of fever, a diminution of expectoration, and lessened liability to relapses. In a tuberculous patient a moderate degree of hyperemia is thus produced by this rest on the affected side. Rest on the right side must be done occasionally in order to afford drainage when needed. It would seem wise to observe all patients who suffer from either nocturnal or early morning hemorrhages, with a view to ascertain, if possible, the side on which they have slept at night.—*Rest of the Individual Lung by Posture, G. B. Webb, A. M. Foster, and F. M. Houck, Jour. A. M. A., November 11, 1916.*

Climate and Tuberculosis.—Climate generates the nerve force needed by the tuberculous patient to conform to the unaccustomed restraint and the rigid mode of living. Change of climate exerts a cheering and salutary effect on the patient's mind, and this mental element should be given serious consideration. There is no one best climate for tuberculosis and many things must be considered in advising a change, such as expense, fitness of the patient to travel, availability of competent medical guidance, food and sanitary arrangements, and mental effect of the proposed new environment.—*Climate in the Treatment of Tuberculosis, G. B. Fish (Los Angeles), Med. Rec., September 30, 1916.*

Bacterial Vaccines in Tuberculosis.—Do bacterial vaccines exert an influence for good in pulmonary tuberculosis and, if so, under what conditions and with what restrictions? Are they capable of doing harm, and what are their special contraindications? 1. Vaccine therapy should by no means be permitted as a routine measure in the treatment of tuberculosis. 2. It has a legitimate place as a tentative procedure in a class of cases subject to certain modifying limitations. 3. Careful adjustment of dosage is vitally important. 4. The number of pulmonary invalids for whom vaccines are properly applicable is comparatively small. 5. The results obtained are very uncertain. 6. The proportion of those exhibiting improvement is disappointing. 7. The gain established in a few is sometimes impressive. 8. Vaccines not infrequently are shown to possess vast possibilities of injury. 9. Finally, the attitude of the profession should be one of the utmost conservatism. The same conclusions hold good, at least to a certain extent, in regard to tuberculin therapy. Attention should be called to the not infrequent delusion as to the efficacy of this treatment in all kinds of tuberculosis. A case is reported showing the evils of this kind of careless empiricism as regards both vaccines and tuberculosis. The use of vaccines representing several varieties of microorganisms is subject to still greater hazards and it is possible that certain constituents of the mixture may become not only useless but actually harmful by prolonging the negative phase and lessening individual resistance. The complement fixation test is of great value in these cases. This has been well shown recently in two patients sent to Colorado for symptoms of obscure fever and other suggestive signs of tuberculosis, in both of whom this test revealed the true gonococcic nature of the cases. In this connection attention should be given to the condition of the kidneys already overtaxed in the elimination of toxins, and the administration of vaccines in large doses may be responsible for urinary findings indicative of further injury to the renal tissues. Change of climate and mode of life may also be considered when judging of the therapeu-

tic effects, real or apparent. The development of a marked change following the use of vaccines cannot be disregarded. There is no valid reason for giving them to patients who are doing well and little chance of proper interpretation of results when they are given to patients rapidly failing. In addition to the active agent two factors may contribute to the results: the psychic element, which is worth considering in lung cases, and the chance the treatment presents for closer observation and more careful direction. The cautious employment of bacterial vaccines would seem to be appropriate chiefly for persons who fail to show satisfying improvement under conservative management. The fever of pulmonary tuberculosis exclusive of septic infections in advanced cases may represent more than any other fact of the disease a possible indication for vaccine therapy. The results obtained in a fair proportion of cases with moderate fever have been such as to encourage the further cautious use of vaccine, though no assurance as to the probably effect should be given. This is also true to a large extent in afebrile cases. As a routine method it cannot be too strongly condemned, but as a special measure of occasional value it is worthy of a judicious trial in selected cases.—*Bacterial Vaccines in Treatment of Pulmonary Tuberculosis: Impressions as to Clinical Value, S. G. Bonney (Denver), Jour. A. M. A., October 21, 1916.*

Vaccine Therapy in Tuberculosis.—Good results have been obtained in pulmonary tuberculosis by the injection of von Ruck vaccine. Fourteen cases are reported, all of which except two which could not be traced, have done well. More cases are under observation. Twenty-eight children between the ages of five and twelve at the Ramsey County Preventorium were given each two doses of vaccine. These children had been exposed to cases of advanced tuberculosis and they all reacted to tuberculin. Subsequent to the injection all children gained in weight and not one developed tuberculosis.—*Prevention and Treatment of Tuberculosis, H. L. Taylor, St. Paul Med. Jour., December, 1916.*

Asthma and Tuberculosis Treated with Autogenous Vaccine.—Three cases of pulmonary tuberculosis and one of asthma in which the use of autogenous vaccines was followed by favorable results are cited. In cases of this kind vaccines, when properly prepared and intelligently administered, together with the proper attention to rest and diet, result in great benefit to the patients. If patients are in an advanced stage before vaccine treatment is started it is needless to say that one cannot expect to obtain the wished for improvement. In cases of pulmonary tuberculosis it is not the tubercle bacilli, but the mixed infection that causes the rapid breaking down of the lung tissue and it is this mixed infection that is affected by autogenous vaccines. The method followed by the author is detailed.—*Treatment of Asthma and Mixed Infection of Pulmonary Tuberculosis with Autogenous Vaccine, T. C. Terrell (Fort Worth), Texas State Jour. of Med., December, XII, 1916.*

Choice of Tuberculins.—The ideal tuberculin is one which elicits a characteristic reaction at the tuberculous focus, which is not toxic for non-tuberculous animals, and which produces no more than transient and slight inflammatory changes at the point of injection. For diagnostic purposes, whether it is to be administered by the cutaneous, percutaneous, intracutaneous or subcutaneous method, the original tuberculin of Koch or O. T. is now recognized as the standard. The activity of any such preparation should first be tested on a known tuberculous subject, whose sensitiveness to a potent tuberculin has previously been determined quantitatively. For therapeutic administration O. T. also stands in high favor, though many clinicians prefer B. F., since they feel that it is better tolerated by some patients who are extremely sensitive to O. T. and B. E. Although T. R. is still preferred by ophthalmologists, it could be recommended that B. E. be employed instead in order to lessen the confusion arising from the large number of preparations. B. E. possesses more than any other tuberculin the characteristics of a bacterial vaccine, but it is more slowly absorbed and when larger doses are reached, tender and persistent swellings frequently develop at the site of injection. A mixture of B. F. and B. E. has been suggested which includes the whole of the bacillary substance and the secretions of the bacillus, all in unchanged condition, since no heat is employed in the preparation of either product. Autogenous tuberculins have been suggested but they are difficult of realization. Vaccines containing living bacilli should not be employed as they have proved useless and dangerous. As regards other numerous preparations which are based on different methods of refining the immunologic substances of the preparation, there is little ground for their adoption, since we are not familiar with the immunologic processes operating in tuberculosis. Our present

theoretical requirements are fully met by O. T., B. F. and B. E.—*The Choice of Tuberculins, Benjamin White, N. Y. State Jour. of Med., November, 1916.*

Tuberculin Therapy.—On a pathological basis our knowledge of tuberculin is limited to the phenomenon of the focal reaction, which is the essential feature of the tuberculin reaction. The basis for indications and contraindications for tuberculin therapy is an estimation of the degree of reactivity of the tissues at the site of the tuberculous lesions. This can be determined only by a careful clinical study of each case. The principal object of tuberculin therapy is to establish tuberculin tolerance, which is not permanent, and the protection offered by it is limited. The various biological tests are too variable to serve as safe guides for doses in tuberculin therapy. The dose is not and cannot be absolute, but must be determined for each individual case, according to the clinical picture.—*Tuberculin Therapy: Its Principles, Limitations and Indications, W. C. Klotz (Los Angeles), Calif., State Jour. of Med., July 1916.*

I. K. Therapy.—In the short space of fifty pages the author sets forth succinctly all that is of importance regarding the theory of action of Spengler's Immunkörper, the methods of its administration, its indications and contraindications, the reactions which it may produce, its use in special cases, and the general considerations regarding its probable value and limitations. The results of its administration in a series of forty-seven cases are discussed from several aspects and the general impression is given that the preparation is a valuable adjunct to tuberculosis therapy. The conclusions, however, seem to be based on far too small a series of cases to be regarded as in any way definite, and this fact is well recognized by the author himself. Unlike another small volume recently published on this same subject, the present one is moderate and very conservative, and its author has confined himself to the results of his own experiences, and has refrained from any indulgence in over enthusiasm, although he believes the preparation, I. K., has not received the recognition which is justly due to it.—*I. K. Therapy (Immunkörper, Immune Substances) in Pulmonary Tuberculosis. With a Summary of Cases and Forty-two Illustrative Charts. By William Barr, District Tuberculosis Officer for the West Riding of Yorkshire. New York: William Wood & Co., 1916. Pp. 82.*

Artificial Pneumothorax.—The most favorable type for this treatment is the acute and rapidly progressing type, acute pneumonic phthisis. In cases of bilateral involvement, the decision for or against hinges on the degree of activity in the better lung rather than on the extent of involvement. The prognosis is better when the lesion in the better lung is situated in the apex. Sometimes when the lesion in the better lung is active, the process may flare up and a hemorrhage occur after induction of pneumothorax. Uncomplicated, unilateral, slowly progressing cases, with few pleuritic adhesions are also well suited. Extension to the healthy lung is thus rendered less likely. Recurrent hemorrhages often respond rapidly to pneumothorax. Other forms of pulmonary tuberculosis, acute interlobar empyema, and cases complicated by laryngeal and intestinal tuberculosis, have been treated with good results. Diabetes and pregnancy are not contraindications. It is contraindicated in miliary tuberculosis, and in complicating cardio-vascular renal disease; it is not beneficial in fibroid phthisis and in emphysema unless there are suppurating cavities. Pleural adhesions prevent successful compression.—*The Scope of Artificial Pneumothorax in Pulmonary Disease, A. E. Greer, Texas State Jour. of Med., December, 1916.*

The Ultimate Results in the Treatment by Artificial Pneumothorax.—During the past four years there have been published in America numerous reports on the treatment of lung tuberculosis by artificial pneumothorax, and these have proved beyond doubt the value of this procedure so far as the early symptomatic results are concerned, provided properly selected patients are operated on. One hundred and four cases are cited, twenty-five of which are to be eliminated as they proved inoperable, and were of interest only in showing that almost one case out of four had such extensive adhesion that operation was impossible. This left seventy-nine cases that allowed of sufficient collapse to produce therapeutic results. Of the seventy-nine patients, thirty-five are dead, two were apparently made worse, eighteen were improved, and twenty-one were discharged and treatment stopped [leaving those cases unaccounted for]. Out of seventy-nine patients receiving lung collapse, nineteen are today working and in good shape physically; a number of these are symptom free. Three others discharged as improved are working but show marked involvement of the lung. A good proof of the class of patients operated on is afforded by the fact that of the twenty-five patients who proved to be inoperable on account of adhesions,

sixteen are dead, and seven are living, but in bad shape physically. Of the inoperable patients only two, or 8 per cent, are working, and only one, or 4 per cent, is improved; while of the patients operated on, twenty-two, or about 28 per cent, are working, and nineteen, or 25 per cent, are in good shape physically. Their results appear to be much better than those of other operators which is ascribed to the following factors: (1) Most of their patients have been treated in their sanatorium, where the complete rest so essential to good results can be enforced. He often felt with Saugman that the procedure should not be undertaken outside an institution. (2) Their patients have been largely of the more intelligent middle class, with sufficient funds to afford proper living conditions and with sufficient brains to lend intelligent coöperation. (3) They were all treated in a very favorable year-round climate. (4) They received small insufflation of gas, never exceeding 500 cc., and as a rule 250 to 350 cc. The habit of introducing 800 to 1000 cc. at one operation is always sufficient explanation why a given operator has not had success with artificial pneumothorax.—*The Ultimate Results in the Treatment by Artificial Pneumothorax., A. G. Shortle, Jour. A. M. A., October 28, 1916.*

Spontaneous Pneumothorax Complicating Artificially Induced Pneumothorax.—Wallgren has had this mishap occur in two cases and has come to regard it as liable to be a very serious complication. In one of his cases it happened twice; the first time from injury by the puncture needle. The second time it occurred three days after the repeated insufflation; evidently the lung tissue had given way to the traction from some linear adhesion. There was no serious damage from either in this case. In the second case the symptoms of the spontaneous pneumothorax did not become evident until eight hours after the insufflation. The tuberculous process in this case soon spread disastrously to the other side. In a third case cited the tuberculosis was of four years' standing. Both lungs were affected but the disease seemed to be stationary on one side. This encouraged the inducing of artificial pneumothorax, but spontaneous pneumothorax complicated the therapeutic, causing considerable disturbance, cough, etc. The patient survived this but died a month later from the progressive pulmonary processes. In connection with these cases Wallgren summarizes seven others from the literature, with over two pages of bibliography. In prevention, it is wise to have the needle graduated so that we can know how deep we are pushing it in. It should be introduced very cautiously, warning the patient to breathe lightly. The tip should not be sharp and it should be inserted at a point where we believe the lung tissue to be as free from changes as possible, keeping remote from the region where a cavity is suspected. The spontaneous pneumothorax can occur from the progress of the destructive process, from trauma or from traction on a weak part of the lung, or from perforation into lung tissue of a pleural empyema complicating the artificial pneumothorax.—*Spontaneous Pneumothorax Complicating Artificial Pneumothorax, A. Wallgren, Upsala Läkare förcnings Förhandlinger, XXI, No. 67.*

Earning Capacity with Induced Pneumothorax.—Koefoed gives the details of thirty-three cases in which an artificial pneumothorax was induced in treatment of unilateral pulmonary tuberculosis. All have been dismissed from treatment for six months at least and the majority for from one to five years. All belonged to the working classes and all are dependent on their own labor for their support, and their employment is under somewhat unhygienic conditions in most of the cases. Their earning capacity is little if at all impaired, but the injected gas is absorbed much more rapidly when the patient is working than when quiet in the sanatorium, and the lung expands again sooner. Artificial pneumothorax has been attempted in 200 cases at the sanatorium (Silkeborg, Denmark) but it could be completed in only 110 cases. In this group 31.3 per cent have full earning capacity. In 37.4 per cent the progress of the disease was not arrested and the patients have died since. In the ninety cases in which it proved impossible to induce the pneumothorax, 57.9 per cent have died since, and only 14.4 per cent are still self-supporting.—*The Working Capacity with Therapeutic Pneumothorax. (Arbejdsdygtighed hos Pneumothoraxbehandlede.) A. Koefood Ugeskrift for Laeger, November 2, 1916.*

Iodoform-Glycerin for Tuberculous Pleurisy and Peritonitis.—Satisfactory and even amazing results in some of the twelve cases of pleurisy and seven of peritonitis. All have kept in good health since. The iodoform and the glycerin are sterilized separately; from 2 to 4 gram of the iodoform in 10 to 20 gram of glycerin are used and the patients restricted to milk at the time. No aspiration of any effusion that may be present is made, and only one injection. There was generally a febrile reaction and

in some cases albuminuria. One young woman with pains in the abdomen, fever and night sweats for about three months, with ascites, threw off all symptoms after the injection of 4 grams of iodoform in 20 grams glycerin. The abdomen seems to be normal and three months afterward the patient was apparently in the best of health, general and local. In one of the peritonitis cases, two injections were given. The fluid was aspirated out in only one case as we do not wish to deprive the body of the antibodies it has been developing. The reabsorption of the fluid acts as a form of autoserotherapy. The outcome was most gratifying in two peritonitis cases given only 2 grams of iodoform. As the patients recovered they were given a course of heliotherapy or radiotherapy, with tonics, usually arsenic and iodin. He never had any mishaps, but refrains from giving this treatment when heart or kidneys are below par.—*Il metodo Capparoni nella cura delle pleuriti e peritoniti tubercolari, C. Antonucci, Policlinico, September 24, 1916.*

Treatment of Tuberculous Peritonitis.—Hyde reports two fatal cases of this condition, in one of which appendicectomy was followed by fistula formation; while in the other the patient grew progressively worse after panhysterectomy. He laments the insufficient attention given the disease by gynecologists. As diagnostic points he lays stress on persistent progress of the condition, without periods of improvement, on painful urination, and on variability of the abdominal physical signs. In the treatment, authorities agree that hygienic measures should be instituted at once, and that laparotomy is the only choice in the way of operative measures. If a suspected case improves under hygienic means, we should not operate. In operating, a small incision about seven cm. long should be used. If a focus of disease can be found and removed without too much traumatism, this should be done. Thus, with no great peritoneal disturbances, slight adhesions, few or no tubercles, we are justified in removing one or both tubes if involved. With extending peritoneal involvement, however, he believes nothing should be removed. Unless there is a band shutting off a loop of intestine, or a distinct obstruction, no intestinal adhesions are to be disturbed. Where intestines are matted together in one mass, under no circumstances must any attempt be made to separate them. All serous or bloody fluid collections should, however, be sponged out, after dropping the foot of the table so as to cause all fluid to gravitate toward the pelvis. The leaving of four grams of iodoform in the peritoneal cavity is advised, and McGlynn has reported seventeen cases cured in one year with the introduction of oxygen into the peritoneal cavity. Important as a final step is the closing of the abdomen without drainage.—*Treatment of Tuberculous Peritonitis, C. R. Hyde, Am. Jour. of Obst., September, 1916.*

Surgery in Pulmonary Tuberculosis.—The operative treatment of pulmonary tuberculosis in properly selected cases enables one to help, and even cure, cases which would otherwise succumb. When the indications for operation are urgent, the risk in proportion to the benefit obtained is very slight. Among the operations to be considered are: artificial pneumothorax, extirpation of the tuberculous lung, the opening of cavities, extrapleural thoracoplasty, plugging of cavities and pleurolysis, phrenicotomy, ligation of pulmonary artery, and operations on the upper aperture of the thorax. Climatic and chemotherapy together with operative procedures are the hope of the future.—*Die operative Behandlung der Lungentuberkulose, F. Jessen (Davos), Wuerzburger Abhandlungen aus dem Gesamtgebiet der praktischen Medizin. Wuerzburg: Curt Kabitzsch.*

Surgery of the Lung.—The opening chapters of the second edition of this book are devoted to a review of the topographical anatomy of the lung. The question of traumatic pneumothorax, its avoidance and treatment, are then taken up. A greater number of operations have been performed without than with the aid of differential pressure apparatus. The advantages and safety of intratracheal anesthesia are pointed out. The methods and surgical technique employed in lung injuries are brought up to date. The description of artificial or therapeutic pneumothorax makes interesting reading. The technic is not as simple as many believe and the dangers demand special training of the operator. Statistics of surgical results are of little value because the conditions of the patients are too diverse. We must always ask how long the patient might have lived without the operation. The most recent measures in thoracic surgery, Trendelenburg's operation for embolism of the pulmonary artery, the operative treatment of rigidity of the thorax in emphysema and the treatment of foreign bodies, are discussed in detail.—*Surgery of the Lung, by C. Garre, Professor of Surgery at the University of Bonn, and H. Ouincke, formerly Professor of Medicine at the University of Kiel. Transl. by D. M. Bancroft, M.D. New York: Wm. Wood and Company.*